1 1.0 PROJECT OVERVIEW

2 1.1 BACKGROUND INFORMATION

- 3 1.1.1 Project Title
- 4 Pacific Gas and Electric (PG&E) Line 57C Reliability Project
- 5 1.1.2 Lead Agency Name and Address
- 6 California State Lands Commission
- 7 100 Howe Avenue, Suite 100-South
- 8 Sacramento, California 95825
- 9 1.1.3 Contact Person and Telephone Number
- 10 Mary Menconi
- 11 (916) 574-0748
- 12 OR
- 13 Dwight E. Sanders
- 14 (916) 574-1880
- 15 1.1.4 Project Location
- 16 The Project area is located is located in the Sacramento-San Joaquin Delta (Delta)
- 17 (Figure 1). The proposed Line 57C pipeline would extend approximately 6.4 miles from
- 18 the McDonald Island Gas Storage Facility (MDIGSF) in San Joaquin County to Palm
- 19 Tract in Contra Costa County (Figure 2). It would cross primarily agricultural lands on
- 20 four islands McDonald Island, Lower Jones Tract, Bacon Island, and Palm Tract and
- 21 four major waterways Old River, Middle River, Latham Slough and Empire Cut.
- 22 1.1.5 Project Applicant's Name and Address
- 23 Pacific Gas and Electric Company
- 24 California Gas Transmission
- 25 375 N. Wiget Lane
- Walnut Creek, CA 94598
- 27 Contact: Frank Maxwell, Gas System Maintenance and Tech. Support
- 28 Phone (925) 974-4084; Fax (925) 974-4220

1.1.6	General	Plan	Designation
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- 2 San Joaquin County General Agriculture and Resource Conservation
- 3 Contra Costa County Open Space and Public Services

4 1.1.7 Land Use

- 5 San Joaquin County Agriculture
- 6 Contra Costa County Agriculture

7 1.1.8 Zoning Classification

- 8 San Joaquin County General Agriculture
- 9 Contra Costa County Heavy Agriculture

10 1.2 PURPOSE AND SCOPE OF PROPOSED MITIGATED NEGATIVE

- 11 **DECLARATION (MND)**
- 12 The following discussion identifies the ways in which the lead agency and any
- 13 responsible agencies would use this document in their consideration of the proposed
- 14 Project.
- 15 The California State Land Commission (CSLC) is serving as the lead agency
- 16 responsible for preparing the IS/MND. CLSC would hold the lease for the Line 57C
- 17 river crossings (Old River, Middle River, and Latham Slough).
- 18 The proposed Project would also be reviewed by a number of State, Federal and / or
- 19 local agencies as noted in Section 1.3.1 Agency Jurisdiction.

20 1.2.1 Organization of MND

- Section 1.0 provides an introduction to the purpose and need for the proposed
- 22 Project. Additionally, it describes the proposed Project, its location, layout and
- facilities, and presents an overview of its operation;
- Section 2.0 is the Initial Study which describes existing environmental conditions,
- 25 Project-specific impacts and mitigation measures;
- Section 3.0 discusses the Project impacts relative to environmental justice;
- Section 4.0 lists the names of those who prepared the MND;

- Section 5.0 lists reference materials used to prepare the MND;
 - Section 6.0 includes a list of acronyms used in the MND;
- Appendix A to this IS/MND contains the mailing list and the notice of the scoping meeting. Appendix B includes comments received during the scoping process, and the location in the IS/MND where the comments are addressed; and
 - Appendix C presents the Mitigation Monitoring Program (MMP). Other technical appendices are also included in this IS/MND.

1.3 PROJECT SETTING

- 9 The Project area is located in the Delta, a 1,100-square mile region in the center of the 10 Great Central Valley of California. Historically, the Delta was a large natural marsh
- 11 created by the confluence of the Sacramento, San Joaquin, Cosumnes, and
- Mokelumne Rivers that extended along both sides of the Sacramento and San Joaquin
- 13 Valleys reaching the lower foothills of the inner Coast Range to the west and the
- 14 foothills of the Sierra Nevada on the east. The Delta now includes numerous islands
- 15 reclaimed from original marshland for agricultural production. It is a level plain, except
- 16 for the levees that have been constructed to prevent flooding of agricultural lands.
- 17 Elevations range from below sea level to a few feet above sea level on levees.
- 18 Decomposition of the organic deposits and consequential land subsidence is the main
- 19 geomorphic process. Fluvial erosion and deposition are the main geomorphic
- 20 processes on and adjacent to levees. The river channels are meandering and have
- 21 been modified by flood control and navigation. There are many overflow channels and
- 22 brackish tidal water enters the area when river flow is low during the summer and
- 23 autumn.

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- 24 The proposed Project would be constructed primarily through agricultural fields, across
- 25 portions of McDonald Island, Lower Jones Tract, Bacon Island, and Palm Tract in the
- 26 Delta. The agricultural lands on McDonald Island and Lower Jones Tract are under
- 27 active Williamson Act contracts. Non-renewal of the Williamson Act contracts on the
- agricultural land on Bacon Island was initiated in 2003 and these contracts will expire in
- 29 2013. The agricultural lands on Palm Tract are protected from development under the
- 30 conditions of a conservation easement.

- In addition to agricultural lands, Line 57C would cross 34 irrigation ditches, four major waterways (Empire Cut, Latham Slough, Middle River, and Old River), two drainage canals, and several levees and privately owned roads. The levee roads and major drainage canals on the islands are managed by local Reclamation Districts. The irrigation ditches are privately owned and maintained. Housing within the Project area is limited to an abandoned house on the west side of Bacon Island, two abandoned
- 7 houses on the east side of Bacon Island and a dormitory and five (5) temporary housing
- 8 trailers on McDonald Island. Agricultural production and processing facilities are
- 9 located on McDonald Island along the eastern and southern portion of the island, both
- south of the proposed alignment.
- 11 Construction activities would require the use of an existing 17-acre construction yard,
- 12 paved with gravel, in Holt, approximately five miles southeast of the Project alignment.
- 13 The surrounding area includes State Route 4 and the town of Holt, with rural residences
- 14 and abandoned industrial and commercial buildings. Holt Union Elementary School is
- located approximately four and a half miles from the alignment.

1.3.1 Agency Jurisdiction

- 17 Lead Agency. The California Environmental Quality Act (CEQA) applies, in part, to a
- 18 discretionary activity undertaken or approved by any public agency that has the
- 19 potential to result in either direct or indirect physical changes in the environment. The
- 20 CEQA lead agency is the California government agency that has the principal
- 21 responsibility for carrying out a project and for preparing the appropriate CEQA
- 22 documentation. The CSLC is the CEQA lead agency for this Project by virtue of its
- 23 discretionary authority to issue a land lease for the pipeline crossings at Old River,
- 24 Middle River, and Latham Slough (Empire Cut is not under the CSLC's jurisdictions as it
- is a man-made waterbody).
- 26 Responsible Agency. A responsible agency is a State or local agency, other than the
- 27 lead agency, that has a legal responsibility for approving a project. The responsible
- 28 agency must actively participate in the lead agency's CEQA process by reviewing the
- 29 document and using it for the consideration of the project. The responsible agency may
- 30 also use this document to achieve compliance with the CEQA when issuing permits
- 31 required to authorize the project. Responsible agencies for this Project are listed
- 32 following the Federal agencies involved.

1 Federal

- <u>U.S. Army Corps of Engineers (Corps)</u> Regulates placement of dredged or fill
 material into waters of the United States, i.e., wetlands, streams, and offshore
 from the mean high tide line, under section 404 of the Clean Water Act. The
 Corps also authorizes activities on, under, over, and through navigable waters of
 the United States under section 10 of the Rivers and Harbors Act of 1899.
 Based on consultation with the Corps, the Project would require authorization
 under both Acts. PG&E would apply for authorization under the Nationwide 12
 permit.
- <u>U.S. Fish and Wildlife Service (USFWS)</u> Reviews and comments on Federal actions (404 permit applications) that affect wetlands and other waters containing endangered freshwater fish and wildlife species. Review is conducted in consultation with the Corps under section 7 of the Federal Endangered Species Act. PG&E has requested a technical letter of assistance from the USFWS to facilitate the consultation process.
- <u>National Marine Fisheries Service (NMFS)</u> Reviews and comments on Federal actions (404 permit applications) that affect wetlands and other waters containing endangered marine and anadromous fish species. Review is conducted in consultation with the Corps under section 7 of the federal Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act (16 United States Code [USC] 1801 et seq.) for designated essential fish habitat (ESH).

<u>State</u>

• Central Valley Regional Water Quality Control Board (CVRWQCB) - Issues water quality certification per section 401 of the Clean Water Act. Water quality certification is required to validate the 404 permit from the Corps. CVRWQCB would also grant approval for project construction under the Construction Stormwater General Permit/Stormwater Pollution Prevent Plan and the General Permit on Dewatering and Other Low Threat Discharges to Surface Water. PG&E would also seek a waiver from the CVWRQCB under the Waiver of Specific Types of Discharges under Resolution R5-2003-008, for this Project.

- <u>California Department of Fish and Game (CDFG)</u> Regulates activities resulting in alteration of streams and lakes and/or sensitive habitat areas containing Statelisted endangered, threatened, and rare species; species of special concern; and fully protected species.
- <u>California Department of Transportation (Caltrans)</u> Regulates activities and issues encroachment permits for projects affecting State-maintained roadways.
 - <u>The State Reclamation Board</u> The Reclamation Board issues encroachment permits for projects crossing multiple Reclamation Districts.
 - San Joaquin Valley Air Pollution Control District (SJVAPCD) and Bay Area Air Quality Management District (BAAQMD) - These agencies regulate construction activities and development, which affect designated air quality standards in San Joaquin and Contra Costa counties.

13 **Local**

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- San Joaquin and Contra Costa Counties These counties would be responsible for issuing ministerial encroachment and grading permits for the Project.
- Reclamation Districts 2030, 2038, 2028 and 2024 These local reclamation districts manage the levees and roads along the levees within the Project area. They would be responsible for issuing ministerial encroachment approvals or coordinating with the State Reclamation Board on its permit.
- 20 Trustee Agency. A "Trustee Agency" is a State agency having jurisdiction by law over
- 21 natural resources affected by a project, which are held in trust for the people of
- 22 California. The State Historic Preservation Office and Native American Heritage
- 23 Commission are trustee agencies for the Project with respect to the historical and
- 24 Native American resources.

25 1.4 PUBLIC REVIEW AND COMMENT

- 26 **1.4.1 Scoping**
- 27 The CSLC, as lead agency in accordance with the provisions of the CEQA, determined
- 28 that the proposed Project may result in potentially significant adverse environmental
- 29 impacts, but that revisions in the proposed Project made by, or agreed to by the

- 1 Applicant would avoid or mitigate such effects to a point where clearly no significant
- 2 effects would occur, and therefore required preparation of this IS/MND pursuant to and
- 3 in accordance with the CEQA (Public Resources Code, sections 21000 et seg.), and the
- 4 State CEQA Guidelines (California Administrative Code, sections 15000 et seq.).
- 5 Although not required for a MND, on December 2, 2005, the CSLC provided a scoping
- 6 opportunity for responsible and trustee agencies and to other interested parties. The
- 7 scoping process solicited both written and verbal comments on the MND's scope during
- 8 a 14-day comment period. The CSLC also held an agency scoping meeting in
- 9 Sacramento, California and a public scooping meeting in Holt, California on December
- 10 9, 2005, to solicit verbal comments on the scope of the MND. Written comments were
- 11 received in response to the scoping process from the following:
- San Joaquin Valley Air Pollution Control District; and
- Nomellini, Grilli & McDaniel Professional Law Corporation.
- 14 Verbal comments were received from David Forkel, Assistant General Manager of the
- 15 Delta Wetlands Project at the agency scoping meeting in Sacramento.
- 16 A copy of the mailing list and notice of scoping meeting are included in Appendix A.
- 17 Scoping meeting transcripts, and comment letters received, as well as an index of
- where such comments are addressed in the document, are included in Appendix B.

19 1.4.2 Public Comment on the MND

- 20 This IS/MND is being circulated to local and State agencies and to interested individuals
- 21 who may wish to review and comment on the report. Written comments may be
- 22 submitted to the CSLC during the 30-day public review period. Verbal and written
- 23 comments on this IS/MND would be accepted at a noticed public meeting (either
- 24 noticed in this document or under separate cover). All comments received would be
- 25 addressed.
- 26 This IS/MND identifies the potential environmental impacts of the proposed Project on
- 27 the existing environment, and indicates how those impacts would be mitigated or
- 28 avoided. This document is intended to provide the CSLC the information required to
- 29 exercise its jurisdictional responsibilities with respect to the proposed Project, which
- would be considered at a separate noticed public meeting of the CSLC.

1 1.5 PROJECT BACKGROUND

1.5.1 Purpose and Need

- 3 The following was provided to the CSLC by PG&E. It has been reformatted for this
- 4 document.

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- 5 PG&E supplies natural gas service to over 3.7 million customers in northern and central
- 6 California. Gas storage mitigates seasonal gas price volatility and ensures reliable gas
- 7 supply during periods of high demand, when supplies from other sources may become
- 8 constrained and more expensive. To ensure reliable gas service to customers at the
- 9 lowest delivered cost, PG&E stores gas and then withdraws it from storage to serve
- 10 customers during periods of peak demand. Without gas storage, PG&E would need to
- 11 significantly increase backbone pipeline capacity to serve peak demands, possibly
- requiring expansion of pipelines upstream of the PG&E system. On a per-energy-unit
- 13 delivered basis, construction and use of gas storage facilities is less expensive than
- 14 expansion of the pipeline facilities to serve peak demand.
 - The McDonald Island Gas Storage Field (MDIGSF) consists of an underground gas storage field and above ground gas processing, compression and metering facilities. A depleted gas production field, consisting of loose and compacted sands and a cap rock formation, serves as the storage reservoir for the storage facility. The processing, compression and metering facilities are used to inject and withdraw gas to and from the MDIGSF is the largest of PG&E's three gas storage fields, gas storage facility. providing approximately 25 percent of available gas supply during cold winter weather in the PG&E service territory. Loss of this supply would significantly reduce availability of gas storage service and, if temperatures fell below normal winter levels during this outage, the PG&E gas system could have insufficient supplies causing service interruptions within the PG&E service territory. Additionally, a resulting spike in gas prices throughout California and possibly throughout the western U.S. would in turn drive up electricity prices. The economic impact of these events on northern California energy consumers would depend on the severity of the cold wave. During a 1-in-3 year cold wave, the loss of the MDIGSF could cost consumers an estimated \$200 million. During a 1-in-90 year cold wave, the cost could climb to \$1.0 billion. These estimated costs have increased significantly during the past five years due to PG&E's experience with actual gas and electric price spikes seen during the 2000-2001 California energy crisis.

- 1 Given the significant consequences of a prolonged storage service outage of the
- 2 MDIGSF, a highly reliable gas storage system is of critical importance to the health,
- 3 safety, and economy of California.
- 4 The Line 57 System is the only pipeline connecting the MDIGSF to PG&E's Backbone
- 5 transmission system and the Bay Area Pipeline Loop. The existing system includes
- 6 Line 57A and Line 57B.
- 7 Line 57A (nominally 18 inches in diameter) was originally built by Standard Oil
- 8 Company from McDonald Island to the Brentwood Terminal in 1949 to transport gas
- 9 from producing wells to the market. In 1993, 6.3 miles of Line 57A from the MDIGSF
- 10 to Old River Pressure Limiting Station (PLS) was removed from service when a
- 11 segment of line floated to the surface during the flooding of Mildred Island. Because
- 12 Line 57A is a telescopic pipe, i.e. the pipe diameter beneath each river crossing is
- smaller than the mainline pipe, Smart Pigs or Geo Sizing Pigs cannot be used to verify
- 14 pipeline integrity. Therefore, PG&E deactivated this high-risk section of Line 57A. The
- 15 portion of Line 57A from the west side of Old River to the Brentwood Terminal is,
- 16 however, still in operation.
- 17 Line 57B (22 inches in diameter) was installed in 1974 to expand and improve the
- 18 reliability of the pipeline system connecting McDonald Island to the major PG&E
- 19 transmission facilities. The Line 57B pipeline is subject to stresses and maintenance
- 20 concerns due to levee movement, levee rupture, and potential flooding of the islands it
- 21 traverses. Although it is in good condition and is inspected regularly, a failure of this
- 22 line at a breached levee or on flooded Mildred Island could take at least two months to
- 23 repair. Because Line 57B is now the only pipeline operating in the area where Line 57A
- 24 was taken out of service, failure of Line 57B would cut off access to natural gas stored
- 25 at the MDIGSF. As noted above, MDIGSF is a critical component in supplying gas
- 26 during peak winter flows, and loss of this supply during winter could lead to significant
- 27 consequences. Therefore, PG&E must improve the reliability of the Line 57 System by
- 28 providing a back up pipeline where there is currently only one working pipeline.

1.5.2 Description of the Facilities

- 30 The pipeline would be designed, constructed, operated, and maintained in accordance
- 31 with all applicable requirements included in the U.S. Department of Transportation
- 32 (DOT) regulations in 49 Code of Federal Regulations (CFR) 192, "Transportation of
- 33 Natural and Other Gas by Pipeline: Minimum Federal Safety Standards." Section 192.1

- 1 defines the scope of DOT's requirements as "This part prescribes minimum safety
- 2 requirements for pipeline facilities and the transportation of gas, including pipeline
- 3 facilities and the transportation of gas within the limits of the outer continental shelf as
- 4 that term is defined in the Outer Continental Shelf Lands Act (43 U.S.C. 1331)."
- 5 Further, this project would be subject to California Public Utilities Commission (CPUC)
- 6 standards as embodied under General Order 112E.
- 7 The new underground pipeline designated Line 57C would be approximately
- 8 6.4 miles long, extending from the MDIGSF to Palm Tract (Figure 2). The entire
- 9 pipeline would be constructed in the Delta region, which is below sea level and consists
- 10 of a network of rivers, waterways (both man-made and natural) and islands created
- 11 through the construction of levees. The installed pipeline would consist of steel pipe
- 12 with 0.75 inch wall thickness. The pipeline would be 24 inches in diameter and be
- designed for maximum allowable operating pressures up to 2,160 pounds per square
- 14 inch gauge.

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McDonald Island Gas Storage Facility to South of Empire Cut (McDonald Island)

- 16 Line 57C would originate at an existing fenced pipeline valve lot adjacent to the
- 17 compressor station at the MDIGSF that accommodates the Line 57A valve manifolds
- 18 and the Line 57B metering and pig-launching facilities. From there, Line 57C would be
- 19 trenched in a southwesterly direction for approximately 5,100 feet, along an existing
- 20 agricultural road and crossing three irrigation ditches (Figure 3). The alignment would
- 21 turn due west and cross two irrigation ditches and the McDonald Island Main Drainage
- 22 Canal using horizontal directional drill (HDD) technology. Approximately 1,650 feet
- 23 would be trenched in a westerly direction to the Empire Cut/Latham Slough bore
- 24 terminus, which would end on McDonald Island approximately 2,300 feet from the
- 25 levee. In addition to Empire Cut and Latham Slough, 11 irrigation ditches would be
- 26 crossed in this HDD on McDonald Island and Lower Jones Tract.

South of Empire Cut to West of Middle River (Lower Jones Tract)

- 28 The pipeline would be installed across Empire Cut and Latham Slough through the use
- of HDD technology. The HDD installation would initiate approximately 2,100 feet south
- 30 of the Lower Jones Tract levee (Figure 4). From the bore initiation point on Lower
- 31 Jones Tract, the pipeline would be trenched in a westerly direction for approximately
- 32 1,375 feet, through corn and safflower fields. From this point, Middle River and seven
- 33 irrigation ditches on Lower Jones Tract and Bacon Island would be crossed by one

- 1 HDD, starting and ending at points approximately 2,100 feet and 2,300 from the levees,
- 2 respectively.

West of Middle River to West of Old River (Bacon Island)

- 4 From the end point of the Middle River HDD, the pipeline would be trenched in a
- 5 westerly direction for approximately 2,650 feet through Bacon Island across corn fields
- 6 and two irrigation ditches (Figure 4). HDD techniques would be used to cross the
- 7 Bacon Island Main Drainage Canal and one irrigation ditch in the middle of the island,
- 8 and approximately 1,000 feet would be trenched to the Old River HDD terminus, located
- 9 approximately 2,300 feet east of the western Bacon Island levee. The pipeline would
- 10 then be installed with HDD techniques under Old River and eight irrigation ditches,
- 11 beginning approximately 2,500 feet west of the eastern Palm Tract levee. From the
- west end of the HDD, approximately 200 feet of pipeline would be trenched to the tie-in
- 13 point on Palm Tract (Figure 5).

14 1.5.3 Aboveground Facilities

- 15 The pipeline valve lot on McDonald Island would be expanded 20 feet on two sides,
- providing an additional 3,900 square feet, to accommodate the Line 57 connections.
- 17 This would occur on property currently owned by PG&E. The expanded area would be
- 18 fenced to match the existing eight-foot high chain link fence. A 30-foot by 30-foot valve
- 19 lot would be constructed on Palm Tract with four to five valves (Figure 6). The valves
- 20 would be both automated and manually operated ball valves. The automated valves
- 21 could be remotely activated if necessary. Manual blowdown valves would also be
- 22 installed within the valve lot. The lot would have a 20-foot tall Supervisory Control and
- 23 Data Acquisition (SCADA) antennae and be fenced with a six-foot high chain-link fence.
- 24 Additionally, the alignment would be marked with approximately 10-foot high signs,
- 25 placed on both sides of each road crossing and at appropriate locations along the route
- so as to not disturb the agricultural operations. Signs would also be placed near each
- 27 levee crossing.

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1.6 CONSTRUCTION PLAN AND DESCRIPTION

- 29 Under current plans, the construction of Line 57C is scheduled to begin in June 2006.
- 30 The line would take approximately four to six months to construct and would be in
- 31 service by December 2006. Construction would occur between 6am and 7pm. Monday
- 32 through Saturday, except for the HDD operations and hydrostatic testing, which may
- 33 occur around the clock.

1 1.6.1 Public Safety

- 2 PG&E has consulted with local landowners who own the parcels that Line 57C would
- 3 cross. Prior to construction, PG&E would also notify all landowners and businesses
- 4 along the access roads and within the construction area about the impending
- 5 construction work. Construction would occur in a rural area and therefore would pose
- 6 little risk to public safety. Agricultural workers would most likely encounter the
- 7 construction activities, and PG&E would ensure that they are informed of the temporary
- 8 use areas. Open trenches in agricultural fields would not be fenced, but signs would be
- 9 placed along access roads.
- 10 The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for
- developing and enforcing workplace safety standards and assuring worker safety in the
- 12 handling and use of hazardous materials. During construction, the contractor would
- abide by the applicable Cal/OSHA standards.

14 **1.6.2 Pipeline Conversion Procedures**

- 15 No pipeline conversion would occur as part of this Project. Line 57A has been
- deactivated, but would not be abandoned or removed as part of this Project. Impacts
- 17 associated to the removal of Line 57A have not been evaluated, but physically removing
- the pipe would likely result in greater disruption to levee stability than keeping this pipe
- in its current location. Line 57B would remain in operation.

20 1.6.3 New Pipeline Construction Procedures

- 21 Conventional pipeline construction in a rural environment proceeds as a moving
- 22 assembly line. HDD methods would be used for approximately 65 percent of the
- 23 pipeline to cross rivers, reclamation district levee facilities, drainage canals, and
- 24 agricultural irrigation ditches. The remaining 35 percent of the pipeline would be
- 25 constructed using open trenching. Before the start of construction, PG&E would
- 26 complete easement acquisitions and finalize land surveys to delineate the centerline
- 27 and temporary use areas. PG&E is proposing a 150-foot-wide temporary use area for
- 28 pipeline trenching to accommodate the equipment needed to place the 24-inch diameter
- 29 pipe into the trench, up to a 20-foot wide trench, and a containment area for large spoil
- 30 piles of loose peat material (Figure 7). Each of the five HDDs would require an
- 31 approximately 0.69-acre temporary use area for equipment set up at the entry point
- 32 (Figure 8), and 100-foot wide temporary use areas for the HDD "pull sections." The pull

- 1 sections are the assembled pipeline pieces that are pulled back into the bore hole. The
- 2 length of the pull sections and temporary use areas would be equal to the HDD length.
- 3 In addition, the three large bores (Empire Cut/Latham Slough, Middle River, and Old
- 4 River) would required an approximately 0.69-acre temporary use area at the exit point
- 5 for hole intersect drilling operations. The temporary use areas would be surveyed and
- 6 staked, along with existing utility lines and other sensitive resources identified by federal
- 7 and State agencies, to prevent accidental damage during pipeline construction. Line
- 8 57C would be a minimum of 24 inches from any existing utilities.

1.6.4 Clearing and Grubbing

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- 10 Only a very small portion of the construction right-of-way would require clearing and
- 11 grubbing, as the Project area is dominated by cultivated agricultural land. Where
- 12 necessary, the construction work area would be cleared and graded to provide a
- 13 relatively level surface for trench-excavating equipment and a sufficiently wide
- 14 workspace for the passage of heavy construction equipment. Trees in the Project area
- only occur on the banks of the rivers. Since no work would occur on the banks or
- 16 levees, clearing of trees is not anticipated.
- 17 All United States Geological Survey (USGS) survey monuments¹ would be identified
- and protected during construction activities. If monuments are accidentally damaged or
- 19 disturbed, PG&E would report the incident to USGS and would restore the monument at
- 20 its original surveyed location.
- 21 The Project area ground surface is predominantly peat soil. Prior to trenching, peat
- 22 topsoils would be segregated in accordance with field conditions and landowner
- 23 requirements and deposited within an approximately 20-foot-wide spoil storage area.
- 24 Where necessary, erosion controls would be installed immediately following initial
- 25 disturbance of the soils and maintained throughout construction to contain excavated
- 26 material within the approved temporary use areas. A continuous "work pad" would also
- 27 be used along the pipeline alignment to support heavy equipment on saturated peat
- 28 soils. Before grading begins, arrangements would be made with property owners and
- tenants to avoid conflicts with normal land use and operations.

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¹ USGS survey markers are eight to 10 inch-diameter bronze disks used for horizontal and vertical control of all the mapping done in the US.

1 1.6.5 Horizontal Directional Drill (HDD) Construction Technique

2 The HDD construction technique would be used to cross Empire Cut, Latham Slough, 3 Middle River, Old River, 29 of the 34 irrigation ditches, two drainage canals, and all paved levee roads and levees (Table 1-1). Line 57C would be installed a minimum of 4 5 approximately 60 feet underneath the bed of Empire Cut, Latham Slough, Middle River, 6 and Old River and approximately 35 feet under the Bacon and McDonald Island Main 7 Drainage Canals. In addition to the minimum depth indicated above, the final pipeline 8 profile of the proposed HDD crossings would be below the potential scour depths 9 identified in the Line 57C Scour Analysis (HDR, 2005). It is anticipated to take a total of 12 to 14 weeks for all five bores. HDD activities under Empire Cut, Latham Slough, Old 10 11 River, and Middle River are anticipated to be completed during the South Delta 12 Construction Window of June 1 and November 30, as suggested by the NMFS 13 (Steward 2005). These HDDs would start and end a minimum of approximately 2,100 14 feet and 2,300 feet, respectively, from the top of each levee.

Table 1-1: Horizontal Directional Drill Summary

HDD Name	Length (Feet)	Number of Irrigation Ditches Crossed
McDonald Island Main Drainage Canal	1,814.2	2
Empire Cut/Latham Slough	6,392.1	11
Middle River	5,904.6	7
Bacon Island Main Drainage Canal	922.4	1
Old River	6,772.3	8

Due to its depth below the levees, the pipeline would not be required to cross the levees perpendicularly. Individual Reclamation Districts may have requirements for crossing the levees for which they are responsible. However, when a project would cross multiple Reclamation Districts, the State Reclamation Board can step in to facilitate the permitting process. The State Reclamation Board regulations do not require perpendicular levee crossings and the Board can waive the permit requirement for projects greater than 50 feet below the levees. For Line 57C, the Applicant would apply for a permit from the State Reclamation Board, which also issued the permits for Lines 57A and 57B (Coleman 2006).

The HDD technique uses a hydraulically-powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. The variable-angle drilling unit would be adjusted to the proper design angle for the particular bore, 10 degrees for this Project. The first and smallest of the cutting heads

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begins the pilot bore at the surveyed entry point in a small pit on the surface. The first section of drill stem has an articulating joint near the drill cutting head that can be controlled by the bore operator. Successive drill stem sections are added as the drill head makes its way under the crossing. The drill head is articulated slightly by the operator to follow a designed path under the waterway and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger cutting heads and reamers are pulled and pushed through the bore hole until it is the appropriate size for the pipeline.

During the bore, drilling fluid is pumped under high pressure through the drill stem to rotate the cutting head and return the soil cuttings to a pit at the surface entry point. The drilling fluid would consist of a water/bentonite (dehydrated clay) mixture. Bentonite is a naturally occurring, non-toxic, inert substance that meets National Science Foundation/ American National Standards Institute (NSF/ANSI) -60 Drinking Water Additive Standards. Use of additives is not expected, but could occur based on evaluations made during construction. Potential additives would include Poly Pac, Super Vis, Drilpex, Soda Ash, or equivalents, none of which are characterized as hazardous or toxic under Federal and State laws. The drilling fluid would be pumped from the entry pit to a processing unit where the soil cuttings are removed and the bentonite reused. The soil cuttings and drilling fluid would be disposed of in compliance with the CVRWQCB Waiver of Specific Types of Discharges under Resolution R5-2003-0008. This waiver authorizes land disposal of non-toxic drilling mud until January 31, 2008, without filing a Report of Waste Discharge.

As part of the bore design process, geotechnical surveys of the subsurface conditions were conducted to determine the underlying geologic strata along the bore path. Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated and the high pressure of the drilling mud results in a fracture of these strata, allowing drilling mud to rise to the surface. The boring operation is stopped immediately when this occurs. This situation is termed a "frac-out" and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. Contingency planning for this event is discussed in greater detail in Section 1.7.2. For the Empire Cut/Latham Slough, Middle River, and Old River HDDs (the longest of the HDDs), the Applicant would use hole intersect drilling operations. This technique requires two drilling rigs placed at both ends of the HDD. The pilot bores of both rigs are drilled such that they would intersect in the middle. Use of this technique reduces the drill fluid pressure and thus reduces the potential for a frac-out.

- While the bore is occurring, pipe sections to be pulled through the crossing would be strung on pipe supports in the temporary use areas. The pipe sections would be welded together and a protective epoxy applied to the joints. Once the bore hole is the correct diameter, a pulling head is welded on the end of this pipeline section, and the pipe is pulled through the bore until it surfaces on the other side. Bulldozers with side booms and slings or roller cradles support the pipe as it is slowly pulled through the bore hole. The completed bored crossing is then connected to the existing pipeline and
- 8 the entry and exit points are backfilled.
- 9 Steel conductor casing, 100 feet long, would be used at both the entry and exit locations
- 10 for the three longer HDD crossings Empire Cut/Latham Slough, Middle River, and Old
- 11 River. The casing would be driven down and installed through the more permeable
- 12 upper soil layers. These upper soil layers would be exposed to high pressures during
- 13 HDD activities and would have a greater probability of frac-out than deeper sections of
- 14 the bore. The conductor casing, however, would significantly reduce the probability of a
- 15 frac-out at these shallow depths.

1.6.6 Trenching

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- 17 Trenches would be excavated to a depth sufficient to: (1) provide pipeline cover greater 18 than the minimum cover required by DOT specifications; and (2) install the pipeline in 19 such a manner to accommodate current agricultural practices and the natural settling of 20 surface soils in the Delta. The trench would be a typical "V" shaped trench, 21 approximately nine feet deep to allow for approximately six feet of cover (exceeding the 22 DOT standards). Due to the unconsolidated nature of the soils, the trench would be 10 23 to 20 feet wide at the top. In agricultural areas, the peat top soil would be segregated 24 and stockpiled separately from other substance soils, in accordance with field conditions 25 and landowner requirements. No blasting is anticipated.
 - Five of the 34 irrigation ditches would be crossed by trenching, during which the irrigation ditches would be flumed to maintain water flow. Field access roads and driveways would also be crossed during trenching. Access to all driveways would be generally maintained with any disruption not lasting more than four hours. PG&E contractors would repair any damage to underground facilities, including irrigation and drainage systems, immediately or as soon as practicable. Trenches typically would not remain open for more than five days in any one area, and there would be approximately 21 days between initial grading and backfilling. Open trenches in agricultural fields would not be fenced, but signs would be placed along access roads.

1 1.6.7 Pipe Bending, and Epoxy and Concrete Coating

- 2 The pipe would be externally-coated with a fusion-bonded epoxy to protect it and
- 3 internally coated Valspar Valgard 126 Flowliner to enhance flow dynamics in a mill in
- 4 southern California. It would then be shipped, via rail and truck, to the Holt construction
- 5 yard in 40-foot lengths.
- 6 Pipe segments used at directional drill locations would not be coated with concrete, but
- 7 would have a special, thin (40 mils; 1 mil = 1/1000 inch) coat of Abrasion Resistant
- 8 Overcoat (ARO) to protect the pipe and allow minimal bending during pull-back
- 9 operations. Due to the depth of the bores, negative buoyancy is not required for the
- 10 directionally drilled pipe. The weld-joint ARO coating on HDD-installed pipe would
- 11 occur in the temporary use areas.
- 12 Approximately 12,100 feet of pipe, the trenched portion of the pipeline, would also be
- 13 coated with two inches of reinforced concrete to create negative buoyancy to keep the
- 14 pipe in the ground in the existing Delta high water table and in the event an island
- 15 floods. Concrete coating may occur at the Holt construction yard, or at an off-site
- 16 coating facility. Concrete coating activities would occur in the field to repair pipe
- damaged during transport. Best management practices as outlined in PG&E's Water
- 18 Quality Construction Best Management Practices Manual (2004b) would be employed
- 19 to ensure that these activities do not impact hydrology or other resources.

20 1.6.8 Pipe Delivery, Stringing, and Welding

- 21 The pipe would be delivered from the Holt construction yard or an off-site coating facility
- 22 to the construction right-of-way. Transporting the required amount of pipe over bridges
- 23 with an 80,000 pound weight capacity would result in the following numbers of truck
- 24 trips from the Holt construction yard or commercial coating yard to the various
- 25 construction sites:
- 92 trips to McDonald Island;
- 12 truck trips to Lower Jones Tract;
- 89 truck trips to Bacon Island; and
- 2 truck trips to Palm Tract.

- 1 Traffic to McDonald Island from the Holt construction yard would take Holt Road north,
- 2 and turn left on McDonald Road. Traffic to Lower Jones Tract would follow Whiskey
- 3 Slough Road north to Lower Jones Road. Traffic to Bacon Island could go one of two
- 4 ways: (1) Whiskey Slough Road north to Lower Jones Road, and cross the Bacon
- 5 Island Bridge to Bacon Island Road; or (2) Trapper Road south to Bacon Island Road,
- 6 to the Bacon Island Bridge. Traffic to Palm Tract would also follow one of two routes -
- 7 (1) Highway 4 west, north on Bixler Road, and then east on Orwood Road and (2)
- 8 Highway 4 west, to Byron Highway north and then east on Orwood Road. Private
- 9 agricultural roads would be used to access the temporary use areas from the main
- 10 roads. Figure 2 shows the access roads.
- 11 Once on the construction right-of-way, individual sections would be aligned and welded
- 12 together into long strings. All welds would be x-rayed to ensure structural integrity and
- 13 compliance with applicable DOT regulations. Welds not meeting American Petroleum
- 14 Institute 1104 specifications would be repaired or removed. Once the welds are
- approved, the welded joints would be covered with a protective coating and the entire
- 16 pipeline would be visually inspected for any faults, scratches, or other damage. Any
- 17 pipe damage would be repaired before lowering-in.

1.6.9 Lowering-In, Tie-In, and Backfilling

- 19 The pipeline would be lowered into the trench with two or more sideboom tractors,
- 20 spaced such that the unsupported pipe between them and between the pipe and ground
- 21 surface would not overstress or yield the pipe to cause buckling or damage the concrete
- 22 coating. Trench dewatering would occur at all tie-in locations and water would be
- 23 discharged to land and any nearby drainage ditch under the conditions of the
- 24 CVRWQCB's "General Order for Dewatering and Other Low-Threat Discharges to
- 25 Surface Waters." Tie-in welds, made in the trench at the final elevation, would be used:
- 26 (1) where the line is obstructed by utilities crossing the trench; (2) at bored road, and
- 27 irrigation ditch crossings; (3) ends of lowered strings; and (4) ends of HDD Sections.
- 28 The welds would be checked with x-ray and the entire pipeline would then be checked
- 29 by caliper for geometrical integrity prior to final tie-in. Trench barriers or breakers would
- 30 be installed before backfilling at specified intervals to prevent water movement along the
- 31 pipeline. The trench would be backfilled using excavated subsoils, and topsoil would
- 32 then be replaced and restored to its original condition using either tracked construction
- 33 equipment or water to minimize future settling (Figure 9). A moderate level of

- 1 compaction (85% of the American Society for Testing Materials D-1557 test procedure)
- 2 would be used to reduce the risk of uplift.

1.6.10 Hydrostatic Testing

4 Each HDD segment would undergo hydrostatic testing prior to installation using water 5 from and discharging water to island dewatering ditches on the islands where the HDD 6 pipe would be staged (McDonald and Bacon Islands). After construction, the entire 7 pipeline would be hydrostatically tested to DOT specifications. Landowners on 8 McDonald Island and Bacon Island own the agrarian rights to all the water that is 9 proposed to be used for hydrostatic testing. The town of Discovery Bay has also 10 indicated that it could serve as a potential hydrotest water source. Negotiations for 11 water purchase options would be conducted in conjunction with easement negotiations. 12 Water quality would be measured prior to use (from the water source) and during 13 discharge to assure that water quality is not compromised as a result of the test. The 14 approximately 1,175,000 gallons of water required for hydrostatic testing would be 15 pumped from agricultural ditches through a filter into one or two test sections, 16 pressurized to design-test pressure, and maintained at that pressure for a minimum of 17 eight hours. Any leaks would be repaired and the section retested until specifications 18 are achieved. Following hydrostatic testing of the entire pipeline, test water would be 19 discharged to Palm Tract. All hydrostatic testing water would be discharged using a 20 flow manifold and energy dissipater to control the rate of discharge, minimize erosion, 21 and consequently minimize turbidity so as to meet the standards set forth under the 22 terms and conditions of the National Pollutant Discharge Elimination System permit 23 issued by the CVRWQCB, and the CVRWQCB's "General Order for Dewatering and 24 Other Low Threat Discharges to Surface Water." PG&E representatives have consulted 25 with P. Gillium at the CVRWQCB for this Project, and based on preapplication 26 conversations, the CVRWQCB agrees that these permits would be appropriate for this 27 Project (Miller, 2006). If it was determined that the Project would not meet the 28 requirements of the "General Order for Dewatering and Low Threat Discharges to 29 Surface Water" permits, then PG&E would apply for a Report of Waste Dishcharge.

No surface water beyond that from agricultural ditches would be impacted as a result of the proposed discharges. No contaminants would be introduced to the surface water during the testing process. Based on past experiences with similar projects, PG&E anticipates that all samples would meet standards for gray water and that the water discharged from the hydrostatic test would pose no threat to any plants, fish, or animals.

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1 1.6.11 Pigging Procedure

2 After Line 57C has been hydrostatic tested and dewatered, the contractor would run 3 several "pigs" of various types (brush, cup, dish, polyethylene, etc.) to remove as much 4 water as possible. Because the interior of the pipe would be lined at the mill, debris in 5 the pipe is expected to be minimal and any remaining residue would be removed from 6 the pipe during this procedure. The contractor would install temporary pig launchers 7 and receivers to expedite this procedure and would monitor the amount of water 8 removed to determine when the line is as dry as possible. Super dry air or other super 9 dry compressed gasses (usually nitrogen) would be blown through the pipe to bring the 10 pipeline moisture down to minus 40 degrees below ambient dew point. This ensures 11 the line is dry and that equipment down stream of the new line would not freeze up due 12 to water molecules in vapor condensing when pressures are significantly reduced at 13 regulating and metering stations throughout the system. The contractor would submit a 14 drying procedure detailing the type of equipment to be used and a pigging procedure 15 with their final hydrostatic testing procedure.

1.6.12 Blow Down and Purging Procedure

- 17 After hydrostatic testing and drying, the Applicant would review weather patterns with
- 18 SJVAPCD and the BAAQMD to determine an optimum range of dates for connecting
- 19 (tying-in) Line 57C to the existing pipelines. The Project team would use data from
- 20 PG&E's Department of Metrological Sciences and coordinate with SJVAPCD and
- 21 BAAQMD's personnel to determine dates when air quality constraints would be minimal.
- 22 Approximately 5.4 million standard cubic feet of natural gas would be released during
- 23 the blow down/tie in procedure. All local emergency service agencies and schools
- 24 would be notified of the pending blow down/tie-in within 72 hours of the anticipated
- 25 activities.

- 26 On the day of the tie in. California Gas Transmission (CGT) Tracy District personnel
- 27 would coordinate with the MDIGSF personnel to reduce the pressure in Line 57B to
- 28 zero pounds per square inch. PG&E's General Construction staff would then cut a draft
- 29 hole 400 feet west of Old River PLS. Air movers would be installed at Bixler Road
- 30 Station and at the MDIGSF valve set to remove the gas in Line 57B and replace it with
- 31 fresh air. When both air mover locations are clear of gas, PG&E would proceed with
- 32 tying-in Line 57C to Line 57B.

- 1 When all tie-in welds are completed and the x-rays are accepted, the line would be
- 2 turned over to CGT Tracy District and MDIGSF personnel. The air movers would be
- 3 removed and valving would be set up for the purge. The tap valve at Old River PLS in
- 4 Contra Costa County on Line 57C would be closed and Line 57B would be purged of
- 5 fresh air from MDIGSF to Bixler Road Station. When it is determined that Line 57B is
- 6 completely filled with 100 percent gas, the blow off valve would be closed and Line 57B
- 7 would be packed to operating line pressure. At this point, Line 57C would be set up for
- 8 the purge from MDIGSF through the blow off valve at the new Old River PLS in Contra
- 9 Costa County and the Line 57C tap. When it is determined that Line 57C is completely
- 10 filled with 100 percent gas, the blow off valve would be closed and Line 57C would be
- 11 packed to operating line pressure.
- 12 All valves would be set to their normal operating positions and the construction sites
- 13 secured.

14 1.6.13 Cleanup and Restoration

- 15 Once Line 57C is packed to operating line pressure, the temporary use areas would be
- 16 laser leveled and restored in accordance with pre-arranged landowner requirements.
- 17 The contractor would obtain landowner signoff verifying that restoration efforts were
- 18 completed to the landowner's satisfaction. All construction material and debris would be
- 19 removed and disposed of at authorized landfills. All work areas would be graded and
- 20 restored to pre-construction contours within 20 days of trench backfilling. Restoration
- 21 activities would commence within six days of final grading.
- 22 All access roads would be re-graded and restored in a manner similar to the pipeline
- 23 right-of-way, unless the property owner requests the road to remain as is. No new
- 24 access roads would be required for pipeline operation and maintenance.

1.7 CONSTRUCTION CONTINGENCY PLANNING

26 1.7.1 HDD Abandonment Contingency Planning

- 27 If extreme conditions are encountered during directional drilling operations and retrieval
- 28 of down-hole tools becomes impossible, the HDD contractor may be forced to invoke
- 29 mitigative measures and abandon a portion of the directional drilled hole or possibly the
- 30 entire hole. This unfortunate event could occur during any phase of the HDD process
- and could potentially require the abandonment and grouting of the hole. The HDD
- 32 contractor would invoke mitigative procedures in order to drastically reduce the

- 1 possibility of this occurring. Following are potential abandonment scenarios which could
- 2 take place during different stages of the drilling process.

3 Abandonment of Pilot Hole/Pilot Hole Continuation

- 4 In the unfortunate event that the HDD contractor is unsuccessful in completing the
- 5 directional drill pilot hole and the hole must be abandoned, the HDD contractor would
- 6 make every effort to remove as much pipe as possible from the hole and abandon the
- 7 un-useable portion of the hole. Mitigative procedures would be invoked for the
- 8 successful continuation of the crossing which includes the following:
- Advancement of down hole assembly and drill stem is stopped;
- Cement, bentonite or an industry approved fill material would be made available
 at the drill rig location;
- Drill mud rig is prepared for pumping material down hole through drill stem; and
- Cement, bentonite or industry approved fill material would be pumped down hole through drill stem as drill string is withdrawn, to displace bentonite slurry in the hole.

Abandonment During Reaming Operation

- 17 In the event that drilling operations are to be suspended during reaming of the pilot hole,
- 18 the following procedures would be enacted:

- Advancement of the reamers would be halted;
- Cement, bentonite or an industry approved fill material would be made available at the drill rig location;
- Drill mud rig is prepared for pumping material down hole through drill stem;
- If the Drilling Superintendent ascertains the need to replace the reamer with a cement head, reamer would be withdrawn, and replaced by a special head built for grouting.
- Cement, bentonite or industry approved fill material would be pumped down hole through drill stem as drill string is withdrawn to displace bentonite slurry in the hole;

1 2	 If reamer can not be extracted, the drill string is withdrawn and the drill rig is moved to the opposite side for removal of the reamer from downhole;
3 4	 Run down hole with cement head on pilot string until previously cemented reamed hole is pumped; and
5 6	 Drill string would be withdrawn and hole pumped with cement or industry approved fill material to displace the bentonite slurry material.
7	1.7.2 Contingency Plan for Frac-out during HDD
8 9 0 1	These protection measures focus on prevention of inadvertent release of drilling fluid into sensitive areas. These measures include the use of 100 feet of steel conductor casing and hole intersect operations (drilling from both directions and intersecting in the middle for the three larger bores) and preventative training. The HDD contractor would also use a "down hole pressure tool" to monitor bore-hole pressures.
3 4 5 6	Frac-outs, or inadvertent release of drilling fluids, are a potential concern when HDD methods are used for construction conduits under sensitive habitats and waterways. While bentonite is a non-toxic substance, its inadvertent release into waterways could adversely impact aquatic species, smothering benthic invertebrates, aquatic plants and fish and their eggs, with the fine bentonite particles.
8 9	In the event drilling fluid is noticeably lost from the bore hole, the driller would implement the following procedures:
20	1. Temporarily cease drilling operations, including pump shut down;
21 22 23	Dispatch experienced observers as required to monitor the area in the vicinity of the crossing, for inadvertent returns of drilling fluid at the surface or in the river;
24	3. Identify the position of the drill head in relation to the point of entry; and
25 26 27	 Re-start the pump and stroke the bore-hole up and down in stroke lengths up to 30 feet up to six times, but no fewer than two, in an effort to size the bore- hole annulus and re-open the circulation pathway.

In addition, the drilling fluid may be thickened within the guidelines set forth by the

manufacturer to aid in re-establishing circulation as required depending on bore-hole

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- 1 conditions. Observers would continuously monitor for inadvertent fluid returns as long
- 2 as the pump remains on. Occasionally, based on the driller's discretion, it could be
- 3 useful to increase the stroke length up to 90 feet or past the point at which drilling fluid
- 4 circulation was lost.
- 5 If circulation is re-established, drilling would proceed as usual and monitoring for
- 6 inadvertent fluid would take place once again if the rate of drilling returns progressively
- 7 decreases at the fluid entry pit. If circulation is not re-established, monitoring for
- 8 inadvertent fluid returns to the ground surface and waterways would continue and
- 9 drilling would proceed.
- 10 If the amount of inadvertent returns is not great enough to allow practical collection, the
- 11 affected area would be diluted with fresh water and allowed to dry and dissipate
- 12 naturally back into the earth. If the amount of returns exceeds that which can be suitably
- 13 contained with hand placed containment barriers, small collection sumps (less than 3.8
- cubic meters) would be used to pump fluid back to the solids control system.
- 15 When drilling fluid returns are observed to be continuously surfacing above ground at an
- 16 accessible location the following procedure would be followed:
- 17 1. Immediately cease pumping of drilling fluid;
- Contain the location such that the drilling fluid cannot migrate across the
 ground surface;

Materials and equipment used for containment:

Straw bales;

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- Silt fence:
- Check dams;
- Backhoe for accessible areas;
 - Shovels;
 - Portable pumps;
 - Flashlights and light towers for night operations;
- (20 each) 100-foot Sections of Hose.
 - 3. Excavate a small sump pit at the location and provide a means for the fluid to be returned to either the drilling operations or a disposal site (i.e. pump through hose or into tanker);

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- Notify on-site contractor supervisor and PG&E representative;
 Continue drilling operations, maintain the integrity of the containment measures, and monitor the fluid returns as required to ensure that no surface migration occurs; and
 Clean-up is carried out once inadvertent returns are contained/controlled:
 - - Fluid pumped to a secure containment vessel;
 - Area is diluted with water; and
 - Area is restored to original condition.
- 9 If inadvertent drilling fluid returns are observed to be surfacing above-ground at a 10 location that is inaccessible, i.e. along the bed of a water body, or, into the water, the 11 following procedures would be followed:
- 1. Ensure that all reasonable measures within the limitations of the technology have been taken to re-establish circulation; and
 - 2. Continue drilling with the minimum amount of drilling fluid required to penetrate the formation and successfully install the product line.

1.7.3 Hazardous Materials Contingency Planning

- 17 The only known hazardous materials that would be on site during construction of Line
- 18 57C would be fuels and lubricants in the construction equipment. These materials
- would not be stored on the construction right-of-way, but at the Holt construction yard.
- The exposure to a fuel/lubricant spill would be limited to the capacity of the equipment.
- Hazardous materials would be managed on site as follows, in accordance with PG&E's Water Quality Construction Best Management Practices Manual (2004b):
- Minimize the amount of hazardous materials stored at the construction site, and
 the production and generation of hazardous waste at the construction site;
- Cover or containerize and protect from vandalism any hazardous materials and wastes;
- Clearly mark all hazardous materials and wastes. Place hazardous waste containers in secondary containment systems if stored at the construction site;

- Place on and cover with plastic all stockpiled cold mix;
- Do not mix waste materials because this complicates or inhibits disposal and
 recycling options and can result in dangerous chemical reactions;
- Inspect storm water that collects within secondary containment structures before
 being discharging to ensure that no pollutants are present. Contaminated storm
 water must be managed according to PG&E Environmental Practices (EPs),
 including Vault Dewatering and SPCC pond drainage;
- Do not discharge spills from a secondary containment system;
- Segregate hazardous waste from other solid waste and dispose of it properly;
 and
 - In addition to following this best management practice, employees or contractors are responsible for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous waste.
- Should a spill occur on the construction right-of-way or at the Holt construction yard, the following would be implemented:
- Stop the spillage of material if it can be done safely;

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- Clean the contaminated area, and properly dispose of contaminated materials;
- For all spills, notify the project foreman and/or the Environmental Representative;
- To the extent that it does not compromise clean up activities, cover and protect spills from storm water run-on during rainfall;
- Do not bury or dilute spills with wash water;
- Store and dispose of used cleanup materials, contaminated materials, and recovered spill material in accordance with federal, State, and local regulations;
- Use absorbent materials to clean up spills. Do not hose down a spill with water;

- Collect and dispose appropriately all water used for cleaning and decontamination of a spill. Do not wash it into storm drain inlets or watercourses.
 Coordinate disposal of these wastes with the Environmental Representative; and
- Keep spill cleanup kits in areas where any materials are used and stored.
- 5 In the event of a spill, the following organizations would be contacted as necessary.
- California State Lands Commission: 24 Hour Emergency Response
 (562) 590-5201
- National Marine Fisheries Service, Sacramento Office Jeff McLain
 (916) 930-5648 to be contacted in event of release in waterway
- California Department of Fish and Game Dale Watkins (916) 358-2842
- The Reclamation Board (916) 574-0651
- Central Valley Regional Water Quality Control Board (CVRWQCB) Pat Gillum
 (916) 464-4709
- US Army Corps of Engineers (Corps) William Guthrie (916) 557-5269
- US Fish and Wildlife Service (USFWS) Kim Squires (916) 414-6625
- The following would be contacted in the event of inadvertent returns within 300 feet of a levee:

Contacts	Phone No.	Affiliation
T D	0(- (000) 000 0000	District For to Date Front O.L. and London

Contacts	Phone No.	Affiliation	
Tom Rosten	Ofc (209) 836-0829	District Eng for Palm Tract & Lower Jones	
	Cl (209) 482-3642		
Bill Darsie	Ofc (209) 946-0268	KSN Rec. District Engineers for	
	CI (209) 946-0296	McDonald Island wdarsie@ksninc.com	
	Fx (209) 810-2708		
Gilbert Cosio	Ofc (916) 456-4400	MBK Engineers Rec. District Engineer for Bacon Island	
	Fx (916) 456-0253	cosio@mbkengineers.com	

1.8 PIPELINE OPERATIONS

The pipeline would be operated and maintained in accordance with all applicable requirements included in the DOT regulations in 49 CFR 191, "Transportation of Natural and Other Gas by Pipeline; Annual Reports, Incident Reports, and Safety Related

1 Condition Reports", and 49 CFR 192, "Transportation of Natural and Other Gas by 2 Pipeline: Minimum Federal Safety Standards." Further, this project would be subject to 3 CPUC standards as embodied under General Order 112E. In addition, the pipeline 4 would be operated in accordance with PG&E's Gas System Maintenance and Technical 5 Support Emergency Plan Manual (EMP) (PG&E 2004a) and Hazardous Materials 6 Business Plan, McDonald Island Underground Natural Gas Storage Facility (PG&E 7 2005). The EMP provides procedures, including pre- and post-emergency planning, on-8 scene response, incident reports, etc., for prompt effective responses to significant 9 upset conditions detected along the pipeline or reported to the public. Typical testing 10 and inspection procedures conducted by PG&E in compliance with Federal regulations 11 include:

12	Inspection/Testing	<u>Frequency</u>
13	Cathodic protection	Annually
14	Cathodic protection rectifier	Six times/year
15	Valve testing	Annually
16	Pipeline patrols	Annually
17	Leak Surveys	Annually
18	Facility risk assessment	Every seven years

- Under the proposed Project, PG&E would obtain a 50-foot permanent easement centered over the pipeline, totaling approximately 39 acres. Restrictions included in the easement would prohibit the planting of trees or vines within 10 feet of the pipeline centerline or erecting structures over the pipeline for protection of the pipe, but other agricultural uses would be allowed.
- Staff at the MDIGSF would operate and maintain the new pipeline, provide routine maintenance services, and respond to emergency situations, in accordance with PG&E's *Gas System Maintenance & Technical Support, Emergency Plan Manual* (2004a). As an additional measure, to prevent third-party damage to the pipeline at a future date, PG&E would take Global Positioning System coordinates at the locations of all pipe welds in order to have an accurate location of the pipeline once in the ground.

Corrosion Protection and Detection Systems

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External corrosion control measures include protective coating on the exterior of the pipe and use of cathodic protection systems. These systems are designed to meet the

- 1 minimum requirements established by the DOT for protection of metallic facilities from
- 2 external and internal corrosion.

1.8.1 Pipe Wall Classifications

- 4 The standards in the Federal regulations become more stringent as human population
- 5 density increases near a pipeline. 49 CFR Part 192 also defines area classification,
- 6 based on population density in the vicinity of the pipeline, that correspond to the
- 7 minimum safety requirements. The class location unit is an area that extends 220 yards
- 8 on either side of the centerline of any continuous 1-mile length of pipeline. The four
- 9 area classifications are defined as follows:
- Class 1: A location with 10 or fewer buildings intended for human occupancy.
- Class 2: A location with more than 10 but less that 46 buildings intended for human occupancy.
- Class 3: A location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building or small well-defined outside area occupied by 20 or more people during normal use.
- Class 4: A location where buildings with four or more stories aboveground are prevalent.
- 19 Class locations representing more populated areas require higher safety factors in
- 20 pipeline design, testing, and operation. In the project area, the pipeline would cross
- 21 land that has minimal housing and is mostly a Class 1 location except for a portion on
- 22 McDonald Island adjacent to temporary agricultural housing (Figure 10). Navigable
- 23 waterway crossings require Class 3 location safety factors and are thus effectively
- 24 Class 3 locations. The entire pipeline has been designed to meet the factor
- 25 requirements of a Class 3 area.

1.8.2 Emergency Response

- 27 PG&E's MDIGSF district superintendent would implement guidelines and procedures
- 28 established in the PG&E's Gas System Maintenance & Technical Support, Emergency
- 29 Plan Manual (PG&E 2004b) and Hazardous Materials Business Plan, McDonald Island
- 30 Underground Natural Gas Storage Facility (PG&E 2005), in the event of a pipeline-

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- 1 related emergency, e.g. gas leak, earthquake, accidental release of hazardous
- 2 materials or waste, fire or explosion, and/or pipeline or facility damage. These
- 3 procedures have been designed in accordance with State and federal regulations,
- 4 including 40 CFR Part 265, Health and Safety Code (Chapter 6.95), and Titles 19, 22,
- 5 and 27 of the California Code of Regulations. Local emergency response providers
- 6 would be notified to assist, e.g., in traffic control, ambulance and hospital services, and
- 7 backup fire protection services.

1.9 MITIGATION MEASURES INCORPORATED INTO THE PROJECT

- 9 The Initial Study analyzed the significance of potential impacts from construction,
- operation, and maintenance of the proposed Project, and identified mitigation measures
- 11 to avoid or reduce each potential impact to less-than-significant levels. Prior to
- 12 implementation of the proposed Project, a process to implement each required
- mitigation measure is specifically addressed in the MMP included under Appendix C of
- 14 this document. The MMP is designed to ensure that identified resource impacts are
- properly mitigated to a less-than-significant level.
- 16 The Applicant has agreed to all of the mitigation measures provided in this document
- and has incorporated them into the proposed Project.